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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/006,966 | 12/05/2001 | Timothy R. Spooner | Analog5721-4 | 1813 |

7590 07/16/2003
Samuels, Gauthier & Stevens LLP
Suite 3300
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EXAMINER

GEYER, SCOTT B

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2829

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,966

Applicant(s)

SPOONER ET AL.

Examiner

Scott B. Geyer

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-156 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-45, 50-53, 56, 57, 59, 61-64, 68, 107, 108 and 110 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 12, 16, 17, 22, 27-30, 102, 104, 115-117, 120, 121, 128-130 and 134-141 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 14, 15, 18, 19, 23, 34, 99, 103, 106, 111, 118, 119 and 123 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Continuation of Disposition of Claims: Claims withdrawn from consideration are 9-11,13,20,21,24,26,31-33,46-49,54,55,58,60,65-67,69-98,100,101,105,109,112-114,122,124-127,131-133 and 142-156.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-8, 12, 14-19, 22, 23, 25, 27-30, 34-45, 50-53, 56, 57, 59, 61-64, 68, 99, 102-104, 106-108, 110, 111, 115-121, 123, 128-130 and 134-141 in Paper No. 12 is acknowledged. The traversal is on the ground(s) that the examiner has failed to make a prima facie case for a restriction between the combination and subcombination relationship, that the examiner has merely taken the subject matter of dependent claims and declared the subject matter to be separate species, and that the examiner has failed to provide any rationale for dividing all the claims up into the alleged species. The combination/subcombination requirement is withdrawn as the applicant has traversed based upon a lack of packaging language in claim 35. While this is true, the basis was based upon the claim set as a whole, and claim 38 clearly recites mounting dies in a package, a limitation not found in claim set group I from the original grouping of claims. Nevertheless, these claims will be addressed together to further prosecution. As far as the argument that the examiner has merely taken subject matter of dependent claims and declared the subject matter to be separate species, this insinuation is totally unfounded. The species section of the restriction requirement was derived after careful reading/consideration of the applicant's specification, not the claim set, as this is the method by which species restrictions are handled by the office. Office policy allows for species restrictions by claims only as a last resort, provided the specification and/or figures do not lend themselves to clear species groups. Lastly, as to the argument that the examiner has

failed to provide rationale for dividing all the claims up into alleged species groups and subspecies delineation, the applicant is reminded that section 2 of the restriction requirement does clearly state which claims belong in which class/subclass, and reasoning is clearly provided in section 2B. Also, as to the species restriction requirement beginning on page 4, the applicant is also reminded that section 3B requires the applicant, not the examiner, to identify which claims read upon the elected species.

The requirement is still deemed proper and is therefore made FINAL.

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2. Claims 1-8, 12, 14-19, 22, 23, 25, 27-30, 34-45, 50-53, 56, 57, 59, 61-64, 68, 99, 102-104, 106-108, 110, 111, 115-121, 123, 128-130 and 134-141 are treated on their merits below.

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3. The applicant is also reminded that all previously non-elected claims will be re-joined, provided their corresponding independent claim is deemed allowable, and also provided those claims have claim language objections or indefinite issues within the claim language (i.e., rejections under 35 USC 112).

Priority

4. Acknowledgement is made of a claim for domestic priority under 35 USC 119(e) to provisional applications 60/251,287 (filed 12/05/2000) and 60/251,288 (filed 12/05/2000).

Information Disclosure Statement

5. The references cited within the IDS papers received on 2-19-02 and 11-04-02, entered as paper nos. 4 and 8, respectively, have been considered. Citation 'AA' on paper no. 8 is a repeat of citation 'AG' from paper no. 4.

Drawings

6. The drawings submitted by the applicant and received on 12-05-01 are acceptable.

Specification

7. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware of in the specification.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8A. Claims 1, 2, 3, 6, 7, 8, 12, 22, 27-30, 102, 115, 117, 128-130 and 134-141 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 8, 24, 26, 27, 32-34, 38-42, 44 and 45 of copending Application No. 10/007,585. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following:

For claim 1 in the instant application, see claim 1 in 10/007,585;

For claim 2 in the instant application, see claim 24 in 10/007,585;

For claim 3 in the instant application, see claim 2 in 10/007,585;

For claim 6 in the instant application, see claims 32 and 33 in 10/007,585;

For claim 7 in the instant application, see claim 33 in 10/007,585;

For claim 8 in the instant application, see claim 34 in 10/007,585;

For claim 12 in the instant application, see claim 38 in 10/007,585;

For claim 22 in the instant application, see claim 5 in 10/007,585;

For claim 27 in the instant application, see claim 8 in 10/007,585;

For claim 28 in the instant application, see claim 5 in 10/007,585; (claim 5 of the co-pending application recites all the limitations of claim 28 in the instant application except for "prevents the wafer cover from deflecting in such a manner to come in contact with the MEMS structures". However, the applicant should note that is merely 'intended' use language and cannot be relied upon to define over 10/007,585, since 10/007,585 discloses all the claimed elements and the recited relationships. Moreover, the examiner will presume that the recited intended use is inherent in 10/007,585 since all the claimed elements and the relationships therebetween are met by 10/007,585).

For **claim 29** in the instant application, see claim 5 in 10/007,585; (claim 5 of the co-pending application recites all the limitations of claim 29 in the instant application except for “prevents electrostatically induced damage to the MEMS wafer”. However, the applicant should note that is merely ‘intended’ use language and cannot be relied upon to define over 10/007,585, since 10/007,585 discloses all the claimed elements and the recited relationships. Moreover, the examiner will presume that the recited intended use is inherent in 10/007,585 since all the claimed elements and the relationships therebetween are met by 10/007,585).

For **claim 30** in the instant application, see claim 5 in 10/007,585; (claim 5 of the co-pending application recites all the limitations of claim 30 in the instant application except for “prevents electrostatically induced damage to the MEMS wafer and prevents the wafer cover from deflecting in such a manner to come in contact with the MEMS structures”. However, the applicant should note that is merely ‘intended’ use language and cannot be relied upon to define over 10/007,585, since 10/007,585 discloses all the claimed elements and the recited relationships. Moreover, the examiner will presume that the recited intended use is inherent in 10/007,585 since all the claimed elements and the relationships therebetween are met by 10/007,585).

For **claim 102** in the instant application, see claim 39 in 10/007,585;

For **claim 115** in the instant application, see claim 26 in 10/007,585;

For **claim 117** in the instant application, see claim 27 in 10/007,585;

For **claim 128** in the instant application, see claim 32 in 10/007,585;

For **claim 129** in the instant application, see claim 33 in 10/007,585;

For claim 130 in the instant application, see claim 34 in 10/007,585;

For claim 134 in the instant application, see claim 38 in 10/007,585;

For claim 135 in the instant application, see claim 39 in 10/007,585;

For claim 136 in the instant application, see claim 40 in 10/007,585;

For claim 137 in the instant application, see claim 41 in 10/007,585;

For claim 138 in the instant application, see claim 42 in 10/007,585;

For claim 139 in the instant application, see claim 42 in 10/007,585;

For claim 140 in the instant application, see claim 44 in 10/007,585;

For claim 141 in the instant application, see claim 45 in 10/007,585.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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8B. Claims 17, 104 and 116 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 24 and 26 of U.S. Patent No. 10/007,585 in view of official notice.

For claim 17 in the instant application, claims 1 and 24 of 10/007,585 recite all the limitations except for the dicing tape being cut when the wafer is sawn. However, it is notoriously well known in the art of semiconductor manufacturing that dicing tapes are cut when wafers are sawn and one of ordinary skill in the art of semiconductor manufacturing would have been motivated to cut a dicing tape while dicing a wafer so as to ensure that the entire wafer had been sawn through, i.e. the dicing tape provides a

dispensable secondary cutting surface to ensure that the primary cutting surface 9the wafer) is completely separated.

For **claim 104** in the instant application, claim 2 of 10/007,585 recites all the limitations except for "removing" the dicing tape. However, claim 2 of 10/007,585 recites the layer of dicing tape having a UV releasable medium. Official notice is taken that it would have been obvious that a dicing tape having a UV releasable adhesive would have been removed by exposing the tape to UV light. One of ordinary skill in the art would have been motivated to use UV light to cause the UV releasable adhesive to release for removal.

For **claim 116** in the instant application, claim 26 of 10/007,585 recites all the limitations except for dicing using a saw. However, it is notoriously well known in the art of semiconductor manufacturing to use a saw for dicing and one of ordinary skill would have been motivated to use a saw to dice a wafer as a saw can smooth straight cuts providing rectangular dice from the wafer.

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8C. Claims **16, 120** and **121** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim of U.S. Patent No. 10/007,585 in view of Yamanaka (5,614,714).

For **claim 16** of the instant application, claims 1 and 24 of 10/007,585 recite all the limitations except for application of a dicing tape to a wafer before the wafer is sawn. However, Yamanaka recites application of a dicing tape to a wafer before the wafer is sawn, as shown in figure 2B-2C. It would have been obvious to a person of ordinary

skill in the art to modify the method recited in 10/007,585 with application of a dicing tape to a wafer before sawing the wafer as taught by Yamanaka so as to provide a reliable cutting surface under the wafer which ensures that the wafer is completely sawn through.

For **claim 120** of the instant application, claim 26 of 10/007,585 recites all of the limitations except for removing the layer of dicing tape from the wafer. However, Yamanaka recites removal of the dicing tape from the wafer as shown in figures 3C and 4A. It would have been obvious to a person of ordinary skill in the art to modify the method recited in 10/007,585 with removal of dicing tape as taught by Yamanaka so as to provide clean separation of the wafer dies for further packaging, without contamination of the dicing tape within the intended semiconductor package.

For **claim 121** of the instant application, claim 26 of 10/007,585 recites all of the limitations except for removing the layer of dicing tape from the wafer by exposing the dicing tape to UV radiation. However, Yamanaka recites removal of the dicing tape from the wafer as shown in figures 3C and 4A, using UV radiation. It would have been obvious to a person of ordinary skill in the art to modify the method recited in 10/007,585 with removal of dicing tape as taught by Yamanaka so as to provide clean separation of the wafer dies for further packaging, without contamination of the dicing tape within the intended semiconductor package.

Allowable Subject Matter

9. Claims 4, 5, 14-15, 18-19, 23, 34, 99, 103, 106, 111, 118, 119 and 123 are objected to as being dependent upon a rejected base claim, but would be allowable if

rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention, regarding the limitations of each of the above recited claims. For brevity, the limitation of each claim will not be repeated here, however, if applicant wishes to incorporate the allowable subject matter into the corresponding independent claim, the applicant is reminded that the entire limitation recited in each of those claims must be incorporated for it is the entire limitation that is deemed allowable. It is also noted that claim 25 is dependent upon objected claim 23 above.

10. Claims 35-45, 50-53, 56-57, 59, 61-64, 68, 107, 108 and 110 are allowed.

10A. The following is a statement of reasons for the indication of allowable subject matter: Claim 35 recites a method for protecting a MEMS structure during dicing of the wafer to provide individual dies, wherein the step-wise method includes fabricating a MEMS wafer having a plurality of MEMS structure sites on a first side and a plurality of through holes on a second side, fabricating a wafer cap, bonding the wafer cap to the first side of the MEMS wafer to produce a laminated wafer, mounting upon the second side a layer of dicing tape and dicing the second side of the laminated MEMS wafer into a plurality of MEMS wafer dies. The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention, regarding the step-wise method as recited by claim 35, wherein a wafer cap is *fabricated* and bonded to the first side of the MEMS wafer, and dicing the

second side of the laminated MEMS wafer, in combination with the other claimed elements. Claims 36-45, 50-53, 56-57, 59, 61-64, 68, 107, 108 and 110 are all dependent, either directly or indirectly, to claim 35.

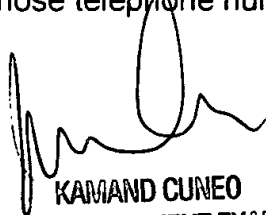
10C. Claims 46-49, 54, 55, 58, 60, 65-67 and 109 will be rejoined and allowed as they also are dependent upon independent claim 35, provided the remaining rejected claims are either placed in condition for allowance or cancelled.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott B. Geyer whose telephone number is (703) 306-5866. The examiner can normally be reached on weekdays, between 10:00am - 6:30pm. E-mail: scott.geyer@uspto.gov

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703) 308-1233. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

SBG
July 14, 2003